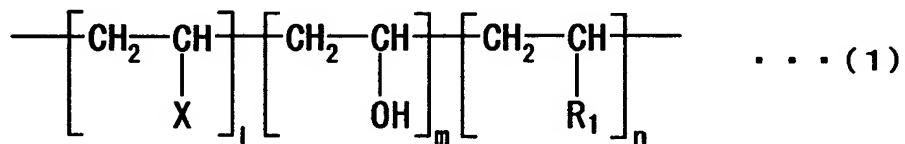


What is claimed is:

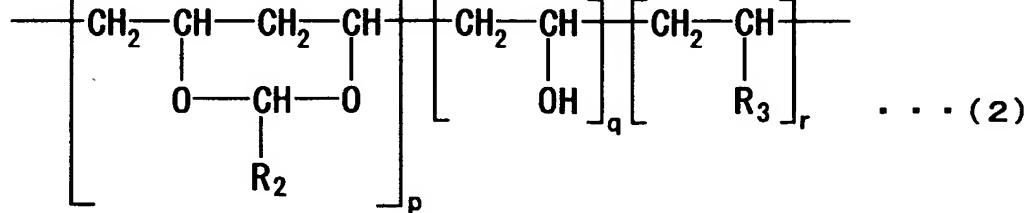
1. A polymer compound agent for a radiation exposure history indicator comprising a polymer compound having a hydroxyl group and at least one group selected from a halogen group and an acetal group.
2. The polymer compound agent for the radiation exposure history indicator according to claim 1, wherein the polymer compound is at least one selected from

10 a polymer compound represented by the following chemical formula (1)



(in above formula, -X is a halogen atom; -R<sub>1</sub> is a hydrogen atom, a cyano group, an alkyl group, an aryl group, an alkoxy group, an alkoxy carbonyl group, a fatty carboxyloxy group, a carboxyl group, an aryloxy group, an aralkyl group, an aralkoxyl group; l, m and n are arbitrary ratios), and

15 a polymer compound represented by the following chemical formula (2)



(in above formula, -R<sub>2</sub> and -R<sub>3</sub> are the same or different to each other, and are a hydrogen atom, a cyano group, an alkyl group, an aryl group, an

alkoxyl group, an alkoxy carbonyl group, a fatty carbonyloxy group, a carboxyl group, an aryloxy group, an aralkyl group, an aralkoxyl group; p, q and r are arbitrary ratios).

5 3. A radiation exposure history indicator sheet comprising a color-changing layer on at least a part of the surface of a base material sheet comprising:

a polymer compound having a hydroxyl group and at least one group selected from a halogen group and an acetal group;

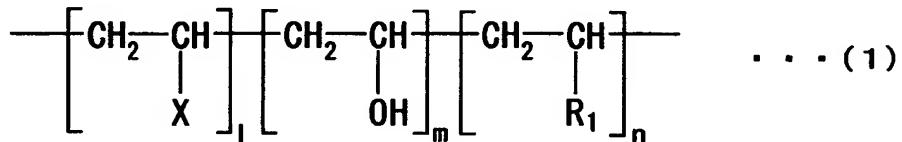
10 a coloring organic electron donor compound;

an active species-generating organic compound for making the organic electron donor compound colored by a radiation; and

a radiation absorbent and/or a radiation-excite fluorescent agent.

15 4. The radiation exposure history indicator sheet according to claim 3, wherein the polymer compound is at least one selected from

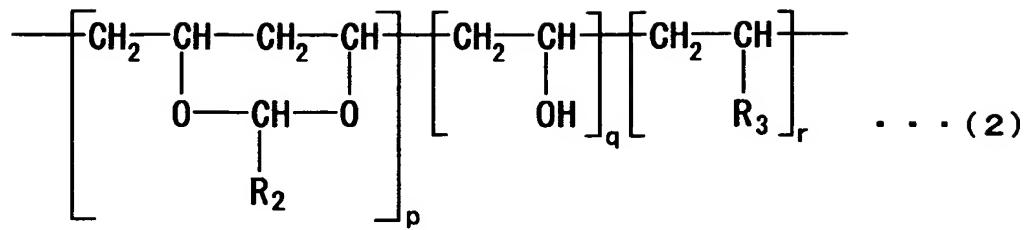
a polymer compound represented by the following chemical formula (1)



(in above formula, -X is a halogen atom; -R<sub>1</sub> is a hydrogen atom, a cyano

20 group, an alkyl group, an aryl group, an alkoxy group, an alkoxy carbonyl group, a fatty carbonyloxy group, a carboxyl group, an aryloxy group, an aralkyl group, an aralkoxyl group; l, m and n are arbitrary ratios), and

a polymer compound represented by the following chemical formula (2)



(in above formula,  $-\text{R}_2$  and  $-\text{R}_3$  are the same or different to each other, and are a hydrogen atom, a cyano group, an alkyl group, an aryl group, an alkoxy group, an alkoxy carbonyl group, a fatty carbonyloxy group, a

5 carboxyl group, an aryloxy group, an aralkyl group, an aralkoxyl group; p, q and r are arbitrary ratios).

5. The radiation exposure history indicator sheet according to claim 3, comprising dye on at least a part of the color-changing layer, whose color  
10 hue of the dye is similar to the color hue of the color-changing layer observed prior to or after changing the color.

6. The radiation exposure history indicator sheet according to claim 3, wherein the color-changing layer is covered with a transparent or  
15 translucent protective film layer.

7. The radiation exposure history indicator sheet according to claim 6, comprising dye on at least a part of either side of the protective film layer, whose color hue of the dye is similar to the color hue of the color-changing  
20 layer observed prior to or after changing the color.

8. The radiation exposure history indicator sheet according to claim 3,

wherein the base material sheet is also a protective film sheet, and an adhesive layer is provided on the non-observation plane of the protective film sheet.

5 9. The radiation exposure history indicator sheet according to claim 8, comprising dye on at least a part of either side of the protective film layer, whose color hue of the dye is similar to the color hue of the color-changing layer observed prior to or after changing the color.

10 10. The radiation exposure history indicator sheet according to claim 9, wherein another base material sheet is adhered to the adhesive layer.

11. The radiation exposure history indicator sheet according to claim 3, wherein an adhesive layer is provided on the non-observation plane of the  
15 base material sheet.

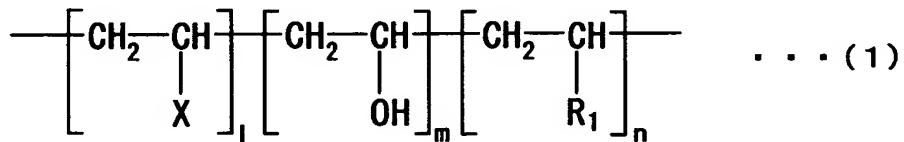
12. A method of dosimetry of exposed dose comprising steps of:  
an exposed dose indicator containing a composition for a radiation exposure history indicator is attached to at least one of a exposing body  
20 selected from skin of a patient, a clothing for an operation, a hat for an operation, sheets for an operation, and the exposing body is exposed;  
after exposure, the exposed dose is measured by comparing a coloring of the exposed dose indicator with a standard color that radiation dose which is equivalent to the exposed dose was irradiated to the same kind of  
25 indicators and the indicators were colored beforehand.

13. The method of dosimetry of exposed dose according to claim 12, wherein the composition for a radiation exposure history indicator comprises:

- a polymer compound having a hydroxyl group and at least one group
- 5 selected from a halogen group and an acetal group;
- a coloring organic electron donor compound;
- an active species-generating organic compound for making the organic electron donor compound colored corresponding to the exposed dose; and
- 10 a radiation absorbent and/or a radiation-excite fluorescent agent; or comprises at least one compound selected from a polyacetylene compound and diarylethene compound.

14. The method of dosimetry of exposed dose according to claim 12,

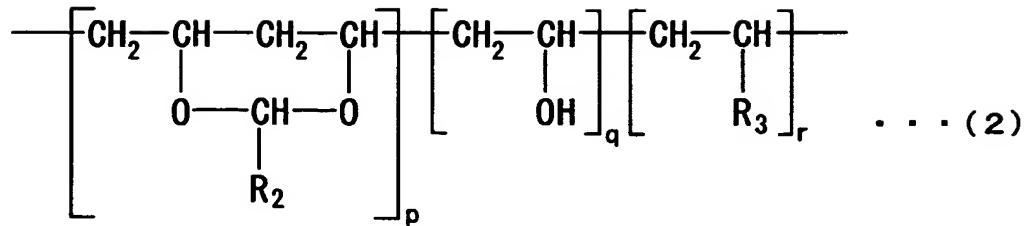
- 15 wherein the polymer compound is at least one selected from a polymer compound represented by the following chemical formula (1)



(in above formula, -X is a halogen atom; -R<sub>1</sub> is a hydrogen atom, a cyano group, an alkyl group, an aryl group, an alkoxy group, an alkoxy carbonyl

- 20 group, a fatty carboxyloxy group, a carboxyl group, an aryloxy group, an aralkyl group, an aralkoxyl group; l, m and n are arbitrary ratios), and

a polymer compound represented by the following chemical formula (2)



(in above formula,  $-\text{R}_2$  and  $-\text{R}_3$  are the same or different to each other, and are a hydrogen atom, a cyano group, an alkyl group, an aryl group, an alkoxy group, an alkoxy carbonyl group, a fatty carboxyloxy group, a

5 carboxyl group, an aryloxy group, an aralkyl group, an aralkoxyl group;  $p$ ,  $q$  and  $r$  are arbitrary ratios).

15. The method of dosimetry of exposed dose according to claim 13, wherein the exposed dose indicator is attached all over the exposing  
10 body.

16. The method of dosimetry of exposed dose according to claim 13, wherein the colors are compared by comparing measured values of a color difference measurement, a concentration reflection measurement,  
15 an absorbance measurement, a transmittance measurement, or by visual observation.

17. The method of dosimetry of exposed dose according to claim 13, wherein the exposed dose indicator is a paint comprising the composition,  
20 a label having the composition, a sheet having the composition, or a molding having the composition.

18. The method of dosimetry of exposed dose according to claim 13, wherein the coloring is a change of a color hue, or a change of a contrast of a color hue.